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FONT REPOSITORY SYSTEM FOR MULTI-USER WEB-BASED APPLICATION

Background of the Invention

This invention is directed to a system and method for rendering fonts on a network. More particularly, this invention is directed to a system and method for storing font image data, which is already rendered, in a history-based order on the server side.

Web-based applications are accessed by client users from web browsers from many different choices of client operating systems, such as Windows, Linux, Unix, and Macintosh. These client operating systems may not have any fonts or any desirable fonts in a desirable language and is especially true in a Linux or Unix system. In a typical web server application, the user sends requests and data from a web browser to the application on the web server. The web-based application responds to the request and sends data back to user through the web browser.

Storing fonts and retrieving the data on the server side allows a user to use different kinds of typefaces, different sizes, and different languages of fonts that may not exist in the user's client system. All users, even if the users are using different operating system and browsers, receive the same results. However, retrieving font data on the server side requires much processing time. There is a significant problem if the font is an outline font in which the shape or outline of each character is defined in vector or curves. Every character of the outline font must be generated as needed which is a computer intensive process.

There is a need for a system and method for rendering fonts on a network which overcomes these problems.

Summary of the Invention

In accordance with the present invention, there is provided a system and method for rendering fonts on a network.

Further, in accordance with the present invention, there is provided a system and method for storing font image data, which is already rendered, in a history-based order on the server side.

Further, in accordance with the present invention, there is provided a system and method for rendering fonts on a network which decrease the time processing time of the server to render the font every time a request is received.

Still further, in accordance with present invention, there is provided a network font rendering system comprising means adapted for acquiring vector data representative of a vector based font, rendering means adapted for rendering at least a portion of the vector based font to generate font images corresponding thereto, and font storage means adapted for storing the font images on a networked memory. The system also comprises means adapted for receiving a font request from at least one networked workstation and communication means adapted for selectively communicating the font images to generate document print data in accordance with a request from the at least one networked workstation.

In one embodiment, the font images are communicated to the at least one networked workstation. In another embodiment, the font images are communicated to an associated printing device.

Still further, in accordance with the present invention, there is provided a method for rendering fonts on a network system comprising the steps of comprising the steps of acquiring vector data representative of a vector based font, rendering at least a portion of the vector based font to generate font images corresponding thereto, and storing the font images on a networked memory. The method further includes the steps of receiving a font request from at least one networked workstation and selectively communicating the font images to generate document.

In one embodiment, the font images are communicated to the at least one networked workstation. In another embodiment, the font images are communicated to an associated printing device.

These and other aspects, features, and advantages of the present invention will be understood by one skilled in the art upon reading and understanding the specification.

Brief Description of the Drawings

Figure 1 is a block diagram depicting an exemplary network for the method and implementation of the present invention.

Figure 2 is a flow chart illustrating the method according to the present invention.

Figure 3 is a sample template for selecting a font.

Figure 4 is a sample template for selecting the parameters associated with the selected font.

Detailed Description of the Preferred Embodiments

This invention is directed to a system and method for storing font image data, which is already rendered, in a history-based order on the server side. This avoids the server side processing time to render the font every time a request is received. This allows users to use many server side fonts that users may not have on their client workstations. In the method, the user uses a web browser to choose a font type, size, and style from a list of available fonts installed on the server. The system then determines if the selected font exists in the font repository. If the font exists, the system retrieves the font images from the font repository. If the font does not exist, the system creates the font images and stores the font images to the font repository.

An exemplary network 100 is shown in Figure 1 for deploying the method and implementation of the present invention. One or more client machines, as illustrated by machines 102 and 104, send requests which are received and responded to by controller/server 106. A suitable client machine is any suitable networked computer or data terminal as will be appreciated by one of ordinary skill in the art. The requests generally include a request to generate a document and the font in which the document is to be generated. The controller governs access to the printer devices 108, 110, 112 attached to the network. The controller includes a storage medium for storing rendered font images shown as 114 and described below. When the user requests that document be generated, the server sends the request either to a printer device to print the document in the font type selected or to the client machine to display the document in the font type selected.

Figure 2 shows a flow chart 200 illustrating the method according to the present invention. At 202, an associated user selects a document to be generated by any suitable means. Preferably, the user accesses a web browser on the client machine and selects the document. The web browser is any suitable browser known in the art, such as Internet Explorer, Microsoft Netscape, and Mozilla. At 204, the user selects a font from the fonts available to the user via any suitable means. Preferably, all the fonts available are displayed on any suitable display means, such as through the web browser on the client machine. Figure 3 shows a sample template 300

for displaying the available fonts for selection by the user. The user selects the font type 302 and the font style 304. The user can preview the font chosen by selecting 306. At least a portion of the document with the selected font is then displayed by any suitable means. The user confirms the selection by selecting OK 308. The user may cancel the selection by selecting Cancel 310.

In a preferred embodiment, the user selects the parameters associated with the font type selected, especially if the font is to be used for tab data. Figure 4 shows a sample template 400 for selecting such parameters. The user selects the tab type at 402 from the available types. The available types are selected and displayed via any suitable means. The user then selects the location for each tab, such as before which page, at 404 and the caption for each tab at 406. The user selects location of the data on the tab at 408 and 410. The user can also select whether to invert colors by selecting the box 412. The user then selects the type of font at 414 and the size at 416. The user then selects the typeface of the font by selecting the Bold box 418, the Italic box 420, the Strikeout box 422, and the Underline box 424. The user may suitably select none, one, or more than one of these options. The user may preview the data with the selected parameters by selecting 426. At least a portion of the document with the selected font and parameters is then displayed by any suitable means.

Once the user has selected the font and any parameters associated with the font, flow proceeds to 206, wherein a determination is made if the selected font is stored in the font repository or storage medium 114 on the controller. If the selected font is not stored in the font repository, flow proceeds to 208 wherein the font images are rendered by any suitable means. The rendered font images are then stored in the font repository at 210. Preferably, the selected information about the font images are associated with and stored with the font images. Such information includes, but is not limited to, the date and time the font was stored, the parameters associated with the font, and the content of the font images. If this selected font is selected again by this user or another user, the system will search for the font in the font repository and retrieve the font for use. The system will not have to render the font images again, but will use the saved font images as rendered. Flow then proceeds to 212, wherein the font images are retrieved for use in the document.

If the selected font is stored in the font repository, then flow proceeds to 212 wherein the font is retrieved from the font repository for use in the document. A determination is then made at 214 if the retrieved font images are to be transmitted or communicated to the client machine.

For a positive determination, the font images are then communicated or transmitted via any suitable means to at least one of the client machine as shown at 216. Once the font images are transmitted to the client machine, flow proceeds to 218 wherein the document is displayed with the selected font via any suitable means. A negative determination at step 214 indicates that the retrieved font images are to be transmitted or communicated to an associated printer device via any suitable means as shown at 220. When the font images are transmitted to a printer device the document is printed with the selected font via any suitable means as shown at 222.

In a preferred embodiment, the rendered font images are deleted from the font repository via any suitable means. In one embodiment, the font images are deleted if the font images are not used or selected within a predetermined time period, such as sixty days. The predetermined time period is suitably selected by selected user, such as an administrative user, via any suitable means. In another embodiment, the system includes a mechanism or means adapted for the user to delete any unwanted rendered fonts from the font repository via any suitable means. In a preferred embodiment, an administrative user may limit the ability of a user to only delete certain fonts, such as those fonts selected and stored at the request of such user.

As described hereinabove, the present invention solves many problems associated with previous type methods and implementations. However, it will be appreciated that various changes in the details, materials and arrangements of parts which have been herein described and illustrated in order to explain the nature of the invention may be made by those skilled in the are within the principle and scope of the invention will be expressed in the appended claims.